

**Claims**

1 1. A cellular radio telecommunications network, in which physical channels may  
2 be reused in the same cell, reused channels on the up link being differentiated by a time  
3 shift between them.

1 2. A network as claimed in claim 1, wherein the reused channels use a common  
2 clock signal.

1 3. A network as claimed in claim 1 or 2, in which timing advance information for  
2 each base station reusing a channel is transmitted on the down link.

1 4. A network as claimed in claim 1 or 2, wherein the reused channels all use the  
2 same signature.

1 5. A network as claimed in claim 1 or 2, including a master base station and a co-  
2 located slave base station, wherein the master base station generates a common reference  
3 clock and the slave base station uses a shifted reference clock to send time shift  
4 information to the mobiles.

1 6. A network as claimed in claim 1 or 2, a base station having two receivers  
2 operating with mutually shifted time references.

1 7. A network as claimed in claim 1 or 2, wherein the time shift is longer than the  
2 propagation delay in the reused channels.

1 8. A network as claimed in claim 1 or 2, wherein the time shift is approximately  
2 equal to the guard interval.

1 9. A method of operation a cellular radio telecommunications network, in which  
2 physical channels may be reused in the same cell, reused channels on the up link being  
3 differentiated by a time shift between them.

1 10. A method as claimed in claim 9, wherein the reused channels use a common  
2 clock signal.

1 11. A network as claimed in claim 9 or 10, in which timing advance information  
2 for each base station reusing a channel is transmitted on the down link.

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1 12. A network as claimed in claim 9 or 10, wherein the reused channels all use the  
2 same signature.

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1 13. A method as claimed in claim 12, wherein a master base station generates a  
2 common reference clock and a co-located slave base station uses a shifted reference  
3 clock to send time shift information to the mobiles.

1 14. A method as claimed in claim 13 wherein two receivers at a base station  
2 operate with mutually shifted time references.

1 15. A method as claimed in claim 9 or 10, wherein the time shift is longer than the  
2 propagation delay in the reused channels.

1 16. A method as claimed in claim 9 or 10, wherein the time shift is approximately  
2 equal to the guard interval.

1 17. A protocol for carrying out all the steps of the method of any of claims 9 or 10.

1 18. A computer program for carrying out all the steps of the method of any of  
2 claims 9 or 10.